mesh and independently coding and transmitting the one or more mesh object layers. Claim 9 further defines that the independently coded and transmitted one or more mesh object layers are decoded to obtain one or more independent mesh object layers. The original 3-D mesh is reconstructed by collecting the independent mesh object layers and removing redundant information. In other words, Applicants' claim 9 at least requires removing redundant information after the decoding one or more of the independent mesh object layers. For example, pages 7 to 8 in Applicants' specification describe exemplary embodiments in which redundant information is generated along with the generation of independent mesh object layers from an original 3-D mesh. To reconstruct the original 3-D mesh, this generated redundant information is removed (e.g., see page 7, lines 27-32).

1.1.1 Li Discloses Removal of Data Redundancy Only During a Compression *Encoding* Process

The Office Action alleges that *Li* discloses "reconstructing original 3-D mesh by collecting the independent mesh object layers and removing redundant information (i.e. abstract, col. 5, lines 57+)" (see the Office Action, page 6). The Office Action further asserts that "[t]he main invention of *Li* '737 is reconstruction of a 3-D mesh (i.e. abstract), and on col. 5, lines 57+ clearly said redundancy removal while a 3-D graphic model is defined [sic]." It is clear from these statements that the Office did not to consider every feature set forth in claim 9, as it must, when making a determination of anticipation under Section 102. In particular, Claim 9 recites the step of "obtaining one or more independent mesh object layers by decoding the independently coded and transmitted mesh object layers, and reconstructing the original 3-D mesh by collecting the independent mesh object layers and removing redundant information." In clear contradistinction to these claimed features, the cited passage of *Li* describes geometry compression, which is used by *Li* to encode a 3-D graphic model defined on an irregular spatial grid. According to *Li*, removal of data redundancy occurs during an encoding process. See *Li*, column 5, line 65 to column 6, line 1:

> The approach adopted currently for geometry compression is to use local prediction to remove data redundancy and then apply a quantization scheme and a run-length coding method to encode the prediction error (emphasis added).

(Also see the subsequent description of geometry encoding at column 6, line 21 to column 9, line 10.) Here, *Li* is describing an encoding process that is fundamentally different from the what is set forth in the above-noted features of claim 9. That is, *Li* does not disclose the claimed combination which includes, *inter alia*, obtaining one or more independent mesh object layers by decoding the independently coded and transmitted mesh object layers, and reconstructing the original 3-D mesh by collecting the independent mesh object layeres and removing redundant information.

1.1.2 Li Does Not Disclose Coding/Decoding of *Independent* Mesh Object Layers

Moreover, while *Li's* abstract discusses encoding topological and geometrical data separately, this does not equate to, or necessarily imply that the topological data is independent from the geometrical data. These features are not mentioned or suggested anywhere in *Li*. Accordingly, *Li* cannot anticipate claim 9. As such, claim 9 is patentable.

1.2 Claim 19

The Office Action also continues to allege that *Li* anticipates claim 19. Applicants dispute this allegation at least for the same reasons set forth in the Amendment dated May 28, 2002, which are incorporated herein by reference, and in further view of the following.

Claim 19 is directed to a progressive 3-D mesh information coding/decoding apparatus that comprises a 3-D mesh object layer analyzer for receiving a 3-D mesh, dividing an input 3-D mesh into one or more mesh object layers, and again dividing each mesh object layer into a plurality of independent mesh components. Claim 19 further defines that apparatus includes a plurality of mesh component coders for independently coding and transmitting the plurality of independent mesh components. For decoding the plurality of mesh components which are independently coded and transmitted, claim 19 requires that the apparatus includes a plurality of mesh component decoders to obtain a plurality of independent mesh components.

1.2.1 The Office Mischaracterizes Claimed Features

In support of the rejection, the Office Action, at page 6, alleges that *Li* discloses "dividing 3-D mesh into a plurality of mesh." Thereafter, the Office Action asserts the following:

> "*Li* '737 clearly said (i.e. abstract) that both the base mesh and the **refinement** operations are entropy coded so that a series of mesh models of **continuously** varying resolution can be constructed. In other words the refinement process is an continuous process until achieving the desired result [sic]." (The Office Action, page 7) (emphasis in original).

Applicants submit that the Office mischaracterized positively recited features of claim 19. For instance, the Office Action first appears to allege that *Li's* abstract discloses separately encoded topological and geometrical data, and that these data respectively correspond to claimed mesh object layers. However, this does not correctly characterize claim 19, which explicitly recites "a 3-D mesh object layer analyzer for receiving a 3-D mesh, dividing an input 3-D mesh into one or more mesh object layers, and again dividing each mesh object layer into a plurality of independent mesh components."

1.2.2 Li Does Not Disclose Independent Mesh Components

Applicants assert that *Li* does not disclose a 3-D mesh object layer analyzer for dividing an input 3-D mesh into one or more object layers, and again dividing each mesh object layer into a plurality of independent mesh components, as claimed. The portion of *Li's* abstract relied upon pertains to a progressive resolution mode. In this mode, *Li* describes that a base mesh is first coded and transmitted. Thereafter, a sequence of succeeding vertex split operations are coded and transmitted to form a progressively rendered reconstruction of the original 3-D mesh. (See *Li*, column 12, lines 9-21 and lines 63-66.) These succeeding vertex split operations of *Li* cannot reasonably be interpreted to be the claimed plurality of independent mesh components. Indeed, according to *Li*:

> The vertex split operations are applied in a layered fashion. The first layer start from the base mesh, and every following layer starts from the mesh resulting from the previous layer (*Li*, column 13, lines 23-26).

Hence, a succeeding layer in *Li* depends on a previous one to define a more refined mesh. That is, each succeeding layer requires the preceding layer in order to render a mesh. As such, it is not reasonable to interpret these layers as a plurality independent mesh components, as claimed.

The Office Action then alleges that *Li* discloses "coding separately (i.e. abstract)." Again, Applicants assert that the Office Action improperly mischaracterizes claim 19, which recites "a plurality of mesh component coders for independently coding and transmitting the plurality of independent mesh components." Furthermore, because *Li* does not disclose these features, claim 19 is patentable over this document.

1.2.3 The Office Has Overlooked Claimed Features

Claim 19 also recites that a 3-D mesh information coding/decoding apparatus comprises a plurality of mesh component decoders for decoding the plurality of mesh components which are independently coded and transmitted. However, the Office has failed to show where this feature is disclosed in *Li*. Applicants submit that these features are not disclosed or suggested anywhere in *Li*. As such, claim 19 is patentable over *Li*.

1.3 Applicants Request Clarification of Above Issues for Appeal

Applicants are entitled to consideration of every feature recited in a claim under examination. It is respectfully asserted that the Examiner has either mischaracterized or not fully appreciated several features recited in each of claims 9 and 19. If the Examiner intends to maintain the current rejections, it is respectfully requested that the Examiner respond to the above remarks so that these issues can be clarified for appeal.

For a reference to anticipate a claim, every claimed feature must be identically or inherently disclosed in the reference.[1] At least in view of the deficiencies of *Li* pointed out above with respect to claims 9 and 19, Applicants submit that *Li* does not anticipate these claims. As such, the rejection is improper and should be withdrawn.

2. Claims 1-3 are Patentable Over the Combination of Li and Migdal et al.

The Office Action also includes a rejection of claims 1-3 under 35 U.S.C. § 103(a) as allegedly being obvious over *Li* in view of U.S. Patent No. 6,064,771 to Migdal et al. (hereinafter, *Migdal*). This rejection is respectfully traversed.

2.1 Claim 1

Claim 1 is directed to a progressive 3-D mesh information coding method comprising the steps of dividing a 3-D mesh into a plurality of mesh components, wherein each of the mesh components correspond to a different partition of the 3-D mesh, coding each of the plurality of mesh components, and multiplexing the plurality of coded mesh components into a compressed bit stream and transmitting the compressed bit stream.

2.2 Li Does Not Teach the Combination of Features Set Forth in Claim 1

The Office Action alleges that "*Li* ... discloses dividing 3-D mesh into a plurality of mesh." (See the Office Action, section 2, lines 3-4). Applicants submit that this statement is a mischaracterization of the claim 1, which specifically recites "dividing a 3-D mesh into a plurality of mesh components." The Office Action also cites a portion of *Li's* abstract pertaining to "coding separately," by which the Office appears to allege that *Li's* topological and geometrical data correspond to a plurality of mesh components. The Office Action correctly acknowledges that *Li* does not teach. (See the Office Action, page 2.)

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[1]"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). See MPEP § 2131.

2.3 The Migdal Document

The Office Action relies on *Migdal* for allegedly teaching that each mesh component corresponds to a different partition of the 3-D mesh. In the context in which this feature is recited in claim 1, Applicants disagree that *Migdal* could be combined with *Li* in order to arrive at the claimed invention.

Migdal describes a motion picture display system which does not require a entire new frame each time images need to be updated. To accomplish this, *Migdal* discloses that a sending computer includes a frame grabber that captures video in real time and digitizes it into digital bitmap fields at successive time intervals (e.g., 1/30 or 1/60 of a second). The resulting bitmap pixel assignment is written into a designated and allocated RAM. The system of *Migdal* includes an "add function" that utilizes a rasterization process, which when initiated, compares pixel color values of a current mesh model (copies of which are kept at both sending and receiving computers) and corresponding pixel color values of the newly captured frame. The sending computer includes a processor for determining which of the points in the captured frame should be added to, or deleted from the current mesh model. To add points, the add function inserts the determined points into the mesh model and outputs an ADD command to the receiving computer so that it can update its current mesh accordingly. At the same time, a "remove function" which scans the bitmap of data from each new video field may be utilized to remove points from the current mesh model and thereafter output encoded REMOVE commands. These ADD and/or REMOVE commands are transmitted to the receiving computer, which updates its copy of the current mesh model.

The Office Action asserts that "it is well-known in the art as evidenced by *Migdal* '771, in particular (i.e. figs. 4g-4j, col. 14, lines 35+) teaches plurality of mesh and also mesh components corresponds to different partition of 3-D mesh [sic]" and that it would have been obvious to have modified *Li* to include this feature "for the benefit of partially updating and correcting." For reasons explained below, Applicants submit that the Office improperly interpreted this feature of claim 1 by isolating it from the rest of the claim. That is, the Examiner considered this feature out of the context of the rest of the claim. This is improper because the subject matter of a claim must be considered as a whole when determining whether the claim is obvious. See MPEP § 2141.02. Applicants respectfully submit that in the context of the present invention, the features acknowledged by the Office to

be missing in *Li* are neither "well-known in the art" nor taught in *Migdal*. Furthermore, for reasons explained below, Applicants submit that one of ordinary skill in the art would not have been motivated to combine these documents in the manner suggested in the Office Action.

2.4 Migdal Would Change the Principle Operation of Li Because Migdal Is Directed to 2-D Mesh Generation and Coding

The *Migdal* document describes a method of motion picture compression that involves animating a 2-D mesh generated from a digitized video signal. (See *Migdal*, column 8, lines 1-16, and column 9, lines 31-32.) Thus, *Migdal* is discloses using 2-D mesh. However, *Li* is directed exclusively to a method and apparatus for compression of 3-D mesh. (See, for example, *Li*, column 1, lines 12-15.) One of ordinary skill in the art would not have been led to combine *Migdal* with *Li* as suggested in the Office Action because it would appear that *Migdal* would change the principle operation of *Li*, and vice versa. As such, a *prima facie* case of obviousness has not been established. See MPEP § 2143.01. For at least this reason, claim 1 is believed to be patentable over *Li* and *Migdal*.

2.5 Migdal Does Not Teach All Claimed Features Acknowledged to be Missing in Li

Applicants submit that *Migdal* does not teach or suggest the claimed combination that includes, *inter alia*, dividing a 3-D mesh into a plurality of mesh components, wherein each of the mesh components corresponds to a different partition of the 3-D mesh.

Applicants submit that *Migdal's* teaching of comparing of pixel color values of the current mesh model with respective ones of a comparison frame to identify update points for the mesh model is different from the claimed "dividing a 3-D mesh into a plurality of mesh components." This is because *Migdal* creates a new (updated) 2-D mesh each time an add or remove command is transmitted. By contrast, claim 1 recites that each of the mesh components corresponds to a different partition of the 3-D mesh (i.e., the same 3-D mesh that is divided to create the plurality mesh components).

2.6 Li and Migdal Lack Existing Nexus for Proposed Combination

The Office's allegation of obviousness with respect to the proposed combination of *Li* and *Migdal* are not readily understood by the undersigned. For instance, the Office alleges that *Li's* topological and geometrical data correspond to dividing a 3-D mesh into a plurality of mesh components, but concedes that *Li* does not teach that each of the mesh components (i.e., what the Office alleges to be the topological data and the geometrical data) corresponds to different partitions of the 3-D mesh. The Office then alleges that *Migdal* "teaches plurality of mesh and also mesh components corresponds to different partition of 3-D mesh [sic]," and that it would have been obvious to combine *Li* and *Migdal* "for the benefit of partially updating and correcting." The undersigned does not understand what nexus exists between these statements in the Office Action. Clarification if this rejection is therefore respectfully requested.

2.7 The Office has not Considered Each of Claims 1-3 "As a Whole"

Applicants further submit that the above statements from the Office Action clearly indicate that the Office has failed to consider the combination of every feature recited in claim 1 (i.e., failed to consider claim 1 as a whole). Furthermore, Applicants reassert that claim 1 does not recite "plurality of mesh and ... ," as characterized on page 2 of the Office Action. Instead, claim 1 recites, *inter alia*, "dividing a 3-D mesh into a plurality of mesh components, wherein each of the mesh components corresponds to a different partition of the 3-D mesh." Applicants submit that one of ordinary skill in the art would not have been led to make the combination as proposed in the Office Action because the portions of these documents relied upon are directed to divergent subject matter.

2.8 The Section 103 Rejection of Claims 1-3 Should be Withdrawn

Because the distinctions between independent claim 1 and the applied documents is believed to be clear, Applicants will not belabor separately arguing the distinctions of each of dependent claims 2 and 3. However, Applicants submit that further distinctions exist therein.

For the above reasons, each of claims 1-3 is believed to recite a novel combination of features not found or suggested by *Li* and *Migdal*, whether taken alone or in

any combination. Accordingly, Applicants respectfully request that the rejection of claims 1-3 be withdrawn.

3. Claims 4-7, 10-18 and 20 are Patentable Over the Combination of Li and Tao et al.

Claims 4-7, 10-18 and 20 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Li* in view of U.S. Patent No. 5,818,463 to *Tao et al.* (hereinafter, *Tao*). Applicants respectfully traverse this rejection.

3.1 Li Does Not Teach All Features of Claim 4

With respect to claim 4, the Office acknowledges in two instances that *Li* does not teach or suggest combination of every feature recited in the claimed method. In the first instance, the Office Action correctly acknowledges that *Li* does not teach a 3-D mesh information coding method that includes the combination of "dividing a 3-D mesh into a plurality of mesh components, wherein each of the mesh components correspond to a different partition of the 3-D mesh." (See the Office Action, page 2.) In the second instance, the Office Action correctly acknowledges that *Li* does not teach reusing information generated by the coded mesh for coding a mesh component that has not yet been coded (see the Office Action, page 3, section 4).

3.2 Tao Does Not Teach the Features of Claim 4 Missing in Li

The Office Action alleges that it is "well-known in the art as evidenced by *Tao* '463, in particular fig. 2, clearly teaches while a mesh component is coded the information generated will feed back to wire-frame synthesizer which will be used for the next coding mesh component (i.e. fig, 2, units 212, 214, 216) [sic]." (See the Office Action, page 3, the last paragraph.) The Office Action then provides a conclusory statement that it would have been obvious to modify *Li* as taught by *Tao* because "reusing information will speed up processing." (See the Office Action, page 4, the first paragraph.) Applicants maintain that *Tao* does not remedy the above-noted shortcomings of *Li*.

Tao describes techniques for compressing data representing an animation sequence at a series of discrete time frames for a 3-D object. The "feedback" process of *Tao* only occurs when animation parameter coding is disabled, and if so, a wireframe synthesizer

takes the output of the local memory in a mesh encoder, decodes it, and generates a reconstructed mesh of the object (see *Tao*, column 4, lines 16-18 and lines 34-37).

Moreover, Applicant dispute the allegation that *Tao* teaches a step of "coding each of a plurality of mesh component, wherein each of mesh components is coded, and information generated while a mesh component is coded is reused in the process for coding a mesh component which has not yet been coded," as claimed. *Tao* describes techniques for compressing data representing an animation sequence at a series of discrete time frames for a 3-D object. The "feedback" process of *Tao* only occurs when animation parameter coding is disabled, and if so, a wireframe synthesizer takes the output of the local memory in a mesh encoder, decodes it, and generates a reconstructed mesh of the object (see *Tao*, column 4, lines 16-18 and lines 34-37). Thus, contrary to what is recited in claim 4, information being fed back to the wireframe synthesizer 212 of *Li* is information generated while an entire mesh is being decoded.

3.3 The Combination of Li and Tao Do Not Render Claim 4 Obvious

Even if one were to consider, for the sake of argument, that one of ordinary skill in the art would have been motivated to combine the teachings of these two documents, this hypothetical combination would still fail to teach every feature of the claims. Applicants reassert that *Tao* does not appear to teach or even remotely suggest dividing a 3-D mesh into a plurality of mesh components, wherein each of the mesh components correspond to a different partition of the 3-D mesh. To the contrary, *Tao* appears to teach that data corresponding to an entire mesh is transferred from the mesh encoder to the wireframe synthesizer. Because both *Tao* and *Li* (see Section 3.1, above) do not disclose this feature, no *prima facie* case of obviousness has been established. Claim 4 is therefore believed to be patentable over the these documents.

3.4 Claims 7 and 16 Are Patentable Over Li and Tao

The Office Action rejected claims 7 and 16 for the same reasons for rejecting claim 4. As discussed above, *Li* teaches removal of data redundancy only in the context of encoding mesh data. *Tao* does not even mention removal of data redundancy. Because

neither of the applied documents teach or suggest the combination of every recited feature, claims 7 and 16 are believed to be patentable.

3.5 Li Does Not Teach the Combination of All Features Recited in Claims 5 and 15

With respect to claims 5 and 15, the Office Action acknowledges that *Li* "does not disclose dividing a transmitted bit stream into a plurality of coded mesh, also decoding each and reconstructing a 3-D mesh by synthesizing." Applicants further submit that neither *Li* nor *Tao* teach a demultiplexer for dividing the transmitted bit stream into a plurality of mesh components; ... and a 3-D data synthesizer for synthesizing the plurality of decoded mesh components to reconstruct a 3-D mesh, as defined by claim 15.

3.6 Tao Does Not Teach All the Features of Claims 5 and 15

In support of the rejections of claims 5 and 15, the Office Action alleges that *Tao's* Figure 2 teaches a "plurality of bit streams being coded (i.e. units 202, 206 and 216) and decoded (i.e. unit 208) and reconstructing a 3-D mesh through multiplexer 218." Applicants submit that this allegation does not remedy what the Office admits is lacking in *Li*. Nor is this allegation consistent with claimed subject matter as set forth in claims 5 and 15. First, *Tao's* multiplexer is not a demultiplexer, as claimed. Secondly, decoding 3-D mesh information is described by *Tao* only in connection with a condition when parameter coding is disabled. According to *Tao*, it is during the time that parameter decoding is disabled that a mesh encoder (*i.e.*, *Tao's* reference 216) outputs a coded mesh to a wireframe synthesizer (*Tao's* reference 212), which decodes the coded data and generates a reconstructed mesh of the object (see *Tao*, column 4, lines 35-37).

3.7 The Proposed Combination of Li and Tao Does Not Render Obvious Claims 5 and 15

Applicants respectfully submit that neither *Li* nor *Tao* teach or suggest a demultiplexer, as set forth by claim 15. This is because the disclosures of both *Li* and *Tao* are mainly directed to encoding mesh data for transmission, and thus do not discuss details of any particular decoding apparatus, much less a demultiplexer for dividing a transmitted bit stream, as claimed. Nor is any 3-D synthesizer mentioned in either of *Li* or *Tao*. In view of

this, Applicants respectfully submit that neither *Li* nor *Tao*, whether taken alone or in combination, teach or suggest the combination of features as defined in claim 15.

Claim 5 is directed to a progressive 3-D information decoding method that requires dividing a transmitted bit stream into a plurality of coded mesh components, decoding each of the plurality of coded mesh components, and reconstructing a 3-D mesh by synthesizing the plurality of decoded mesh components. As pointed out above, *Tao* does not discuss details of decoding mesh data. Moreover, *Tao* does not discuss or mention that a transmitted bit stream is divided into a plurality of coded mesh components by any of the elements of *Tao's* Figure 2, particularly those identified by the Office Action as units 202, 206, 208, 216, and (multiplexer) 218.

3.8 The Office's Interpretation of Claim 10 is Improper

As to independent claim 10, the Office Action alleges that claim 10 is "substantially similar to claims 1, 3 and 4-5." The undersigned does not understand this statement. Simply alleging that a claim is "similar" to other claims is not believed to be a proper condition by itself for showing obviousness under 35 U.S.C. § 103(a), especially because the scope of claim 10 is different from the claims alleged to be "similar." MPEP § 2141 states that the standard of patentability to be applied in obviousness rejections should be consistent with that followed in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). Because the Office has not provided any explanation as to why claim 10 is rejected other than alleging its similarity to other claims, it is respectfully submitted that the Office has not fulfilled its burden of enunciating a factual basis for rejecting claim 10 that is consistent with the Office's policy set forth in MPEP § 2141. At least for this reason, Applicants respectfully submit that the rejection is improper and should be withdrawn.

3.9 Independent Claim 10 is Patentable Over Li and Tao

Furthermore, independent claim 10 requires, *inter alia,* extracting one or more mesh object layers from a 3-D mesh and dividing each of the mesh object layers into a plurality of independent mesh components. Applicants respectfully submit that neither *Li* nor *Tao* disclose or suggest this feature. *Tao* does not appear to disclose any process of extracting and dividing 3-D mesh object layers. *Li* describes that a plurality of mesh layers may be

formed from a 3-D mesh to provide incremental convergence from a coarse (base) version of a mesh to the original 3-D mesh. However, *Li* does not mention or suggest extracting one or more mesh object layers from a 3-D mesh and dividing each of the mesh object layer into a plurality of independent mesh components, as defined in claim 10. To the contrary, *Li* describes forming a plurality of successive mesh layers each of which respectively depend on a preceding layer, as described above. In view of this, claim 10 is patentable at least because *Li* and *Tao* fail to teach each and every feature recited by claim 10.

3.10 The Combination of Li and Tao Does Not Teach the Combination of Features Set Forth in Independent Claims 12 and 17

With respect to independent claims 12 and 17, the Office Action alleges that *Tao* teaches "a 3-D data analyzer for receiving a 3-D mesh and reconstructing the input 3-D mesh into a plurality of mesh (see col. 2, lines 58+ of Tao '463)." Applicants disagree. Claim 12 recites, *inter alia*, a 3-D data analyzer for receiving a 3-D mesh and reconstructing the input 3-D mesh into a plurality of mesh components. Claim 17 at least requires a 3-D mesh object layer analyzer for receiving a 3-D mesh and dividing an input 3-D mesh into one or more independent mesh object layers. The portion of *Tao* cited in the Office Action describes formation of a plurality of mesh, wherein each mesh represents a different region of an object. In this passage, *Tao* is merely describing the creation of one or more mesh that respectively represent one or more regions of an object. This contrasts with what is recited in claim 12, which defines that a 3-D mesh is reconstructed into a plurality of mesh object layers, and by claim 17, which defines a 3-D analyzer for receiving a 3-D mesh and dividing an input 3-D mesh into one or more independent mesh object layers. Applicants therefore respectfully submit that claims 12 and 17 are patentable over *Tao* and *Li* at least because neither *Tao* nor *Li* teach or suggest these claimed features.

3.11 The Combination of Li and Tao Does Not Teach the Combination of Features Set Forth in Dependent Claims 18 and 20

The Office action alleges that claims 18 and 20 are "substantially similar" to claims 5 and 9, and therefore the same ground for rejecting claims 5 and 9 also apply here.[2] Applicants disagree with this allegation. As discussed above, *Li* describes geometry compression, which is used by *Li* to encode a 3-D graphic model defined on an irregular spatial grid. In contrast, claim 18 requires that an apparatus comprises a synthesizer for synthesizing one or more independent mesh object layers and removing redundant information to reconstruct the original mesh. Similarly, claim 20 requires a synthesizer for synthesizing a plurality of independent mesh components and removing redundant information between adjacent mesh components to reconstruct the original 3-D mesh. Thus, both claims 18 and 20 involve processing independent mesh information that has been decoded. By contrast, *Li* describes removal of data redundancy only during an encoding process. *Tao* is silent with respect to removal of data redundancy. For at least these reasons, the combination of *Li* and *Tao* fail to teach or suggest the combination of features recited in claims 18 and 20.

4. Summary

To anticipate a claim, a prior art reference must identically disclose, either expressly or inherently, every feature set forth by the claim. A *prima facie* case of obviousness of a claimed invention exists only when all the features of the claim must be taught or suggested by the prior art. See MPEP § 2143.03. It is respectfully submitted that none of *Li*, *Migdal* and *Tao*, whether considered individually or in any combination thereof, teach or suggest all of the features of independent claims 1, 5, 9, 10, 12, 15, 17 and 19, and hence their respective dependent claims 2-7, 11, 13-14, 16, 18, and 20. Furthermore, Applicants dispute all the Examiner's allegations that claimed features were "well-known"at the time the invention was made.

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[2]Applicants note that the only rejection of claim 9 in the Office Action is under Section 102. Claims 18 and 20 stand rejected under Section 103. Thus, the Office's statement that the rejection of claims 18 and 20 are under the same ground for rejecting claim 9 is unclear.

For the foregoing reasons, the application is believed to be in condition for allowance. Prompt notice of same is earnestly solicited.

Respectfully submitted,

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Date: November 12, 2002